

# THE BOSTON MEDICAL AND SURGICAL JOURNAL.

VOL. LVIII.

THURSDAY, JULY 22, 1858.

No. 25.

## FRACTURES OF THE HUMERUS.

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[Communicated for the Boston Med. and Surg. Journal.—Continued from p. 418.]

### § 4. *Fractures through the Surgical Neck (including separations at the Upper Epiphysis).*

I have already defined the "Surgical Neck" as all of that narrow portion commencing at the epiphysis and terminating at the insertion of the pectoralis major and latissimus dorsi. It seems proper, therefore, that we should include under this division, both fractures and separations occurring at the epiphysis, especially since, owing to their anatomical relations, they are subject to the same displacements as fractures occurring half an inch or one inch lower down. The capsular muscles, with the exception of the teres minor, having no more influence over the lower fragment when a separation occurs at the epiphysis, than when a separation occurs at any other point of the surgical neck.

The following is an account of the only case of separation at the epiphysis which I have ever recognized.

Mike Bovin, æt. 13 months, fell sideways from his cradle in November, 1855. He was taken to an empiric, who called it a sprain and applied liniments. Three weeks after the accident he was brought to me, and I found the arm hanging beside the body, with little or no power, on the part of the child, to move it. There was a slight depression below the acromion process, and considerable tenderness about the joint; but the shoulder was not swollen nor had it been at any time. The line of the axis of the bone, as it hung by the side, was directed a little in front of the socket.

On moving the elbow backward and forward, the upper end of the shaft moved in the opposite directions with great freedom, and could be distinctly felt under the skin and muscles. This motion was accompanied with a slight sound, or sensation, a sensation not like the grating of broken bone, but much less rough.

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There was no shortening of the limb. When the elbow was carried a little forward upon the chest the fragments seemed to be restored to complete coaptation; and of this I judged by the restoration of the line of the axis of the shaft to the centre of the socket, and by the complete disappearance of the depression under the point of the acromion process.

I applied suitable dressings to retain the arm in this position; but five months after the injury was received the fragments had not united, and the child was still unable to lift the arm, although the forearm and hand retained their usual strength and freedom of motion. The same crepitus could occasionally be felt in the shoulder, and the same preternatural mobility. The shoulder was at this time neither swollen nor tender.

Robert Smith and Sir Astley Cooper both speak of it as a frequent accident in early life, but the recorded cases are very few. The case mentioned by Mr. Smith has been given very much at length, and as a characteristic example, deserves to be repeated.

"During the early part of last year, a boy, eight years of age, was admitted to the Richmond Hospital, under the care of Dr. MacDonnell. About a week previous to his admission he had fallen upon the shoulder, and at once lost the power of using his arm.

"It was at first sight evident that there did not exist any luxation of the head of the humerus, and it was equally obvious that the case was not an example of any of the ordinary fractures to which the neck of the bone is liable. There was no diminution of the natural rotundity of the shoulder, nor any unusual prominence of the acromion process; the head of the bone could be distinctly felt in the glenoid cavity, and it remained motionless when the arm was rotated: there was very little separation of the elbow from the side, but it was directed slightly backward.

"About three quarters of an inch below the coracoid process, there existed a remarkable and abrupt projection, manifestly formed by the upper extremity of the shaft of the humerus, every motion imparted to which it followed. Its superior surface, which could be distinctly felt, was slightly convex, and its margin had nothing of the sharpness which the edge of a recently-broken bone presents in ordinary fractures.

"When this projecting portion of the bone was pushed outward, so as to bring it in contact with the under surface of the head of the humerus (previously fixed as far as it was possible to do so), a crepitus was produced by rotating a shaft of the bone. It did not, however, resemble the ordinary crepitus of fracture, but it would be extremely difficult, by any description, to convey a clear idea of what the difference consisted in.

"From a careful consideration of the symptoms and appearances above mentioned (taking into account also the age of the patient), the diagnosis was formed, that the injury consisted in a separation

of the superior epiphysis of the humerus from the shaft of the bone. Various mechanical contrivances were employed in this case, but all proved ineffectual in maintaining the fragments in their proper relative position."\*

Sir Astley Cooper has also briefly described one example.

"Its age was ten years. The symptoms of the injury were, inability of moving the elbow from the side, or of supporting the arm, unless by the aid of the other hand, without great pain. The tension which succeeded filled up the hollow which was at first produced by the fall of the deltoid muscle. When the head of the bone was fixed, the fractured extremity of the humerus could be tilted under the deltoid muscle, so as to be felt, and even shown, by raising the arm at the elbow. Crepitus could be perceived, not by rotating the arm, but by raising the bone and pushing it outward. The cause of the fracture was a fall upon the shoulder into a saw-pit of the depth of eight feet."†

It will be necessary, in order to a full understanding of the various aspects of this fracture, to relate several illustrative examples.

**CASE I.—Simple Fracture; never displaced. Union without Deformity.**

Alexander Balentine, æt. 62; admitted to the Buffalo Hospital of the Sisters of Charity, Dec. 19, 1851. He had fallen upon the sidewalk, striking upon his right arm. Dr. Johnson, of Buffalo, had reduced the fracture and applied appropriate dressings. No union of the fragments had yet occurred, but as the surfaces were in apposition it was only after considerable manipulation, and not until we bent the forearm upon the arm, and rotated the humerus by means of the forearm, that the crepitus became distinct, and gave unequivocal evidence of the existence of a fracture, and of its situation.

The treatment, after admission, consisted in the application of one gutta percha splint, accurately moulded, and extending from above the shoulder to below the elbow, and encircling one half the circumference of the arm; the splint being secured with the usual bandages, &c.

The result is a perfect limb.

**CASE II.—Simple Fracture. Union with Displacement and Deformity.**

White, of Buffalo, æt. 12, fell 14 feet, striking on the front and outside of the left shoulder. Dr. P., of Erie Co., saw the lad within three hours (July 19th, 1853). He was brought to me on the fourth day after the accident. The upper part of the arm was then very much swollen. I found the arm dressed as for a fracture of the middle or lower third of the humerus. It was shortened one inch. The elbow was inclined backward, and there

\* Robert Smith, *Op. cit.*, p. 201.

† A. Cooper, *Op. cit.*, p. 352.

was a remarkable projection in front of the joint feeling like the head of the bone. The hand and arm were powerless. I suspected a dislocation of the head of the humerus forward; and having administered chloroform, I attempted its reduction with my heel in the axilla. While making extension, I felt a sudden sensation, like the slipping of the bone into its socket, but on examination I found the projection continued as before. I then repeated the effort, with precisely the same result.

I now applied an arm sling, and directed leeches and cold evaporating lotions.

On the 25th, five days after the accident, it was examined by Drs. Mixer, McGregor, Joseph Smith, with myself. We still believed it was a dislocation, and having administered chloroform, we again attempted its reduction. The same slipping sensation was produced as before, and the deformity was repeatedly made to disappear; but on suspending the extension, it as often re-appeared.

The character of the accident was now made apparent, and we proceeded at once to apply the splint and bandages suitable for a fracture of the surgical neck of the humerus, namely, a gutta percha splint, extending, on the outside, from the top of the shoulder to below the elbow, with an arm and body roller secured with flour paste.

On the 31st, twelve days after the accident, Dr. Wilcox, Marine Surgeon at Buffalo, saw the arm with me. The fragments were displaced the same as when I first saw it, and the same as when no apparatus was applied. We examined it again carefully, and attempted to make the fragments remain in place, but we were unable to do so, except while holding them and making extension.

August 9th (21st day).—I removed all the dressings. Motion between the fragments had ceased, but the projection and shortening remained as before; now, also, the irregular projections of the fractured bones were more distinctly felt. The dressings were never re-applied. Three months later no change had occurred. He could carry the elbow forward freely, as well as backward, the motions of the shoulder-joint being unimpaired.

*CASE III.—Simple Fracture, with Displacement; resulting in Deformity and Non-union.*

L. B., of Lockport, æt. 43, was thrown from his horse in February, 1854, striking upon his right elbow.

Dr. Maxwell, an experienced surgeon of Lockport, examined and dressed the fracture. Dr. Fassett was present and assisted at a subsequent dressing. Three surgeons who examined the arm before Dr. M., called it a dislocation.

Twelve weeks after the accident, Mr. B. called upon me. The right arm was shortened one inch; the elbow hung off slightly from the body; the upper end of the lower fragment was distinctly felt in front of the shoulder-joint under the clavicle, feeling very much like the head of the bone. The fragments were not united,



but they could be seized easily, and made to move separately and freely. He stated to me that he was subject to rheumatism, and especially in the shoulder and arm of the side injured. He wished to know whether it could not be "re-set."

Two years after, I found the bone still ununited. He was, however, able to write with that hand, having first lifted his arm with the other hand and laid it upon the table.

*CASE IV.—Simple Fracture; probably impacted; resulting in Deformity.*

Wm. A., of Buffalo, æt. 15, fell backward, June 4, 1855, striking on his back and left shoulder. Dr. L. saw it immediately, and, regarding it as a dislocation, attempted its reduction. He subsequently repeated the attempt. I saw the patient with Dr. L. on the tenth day. The arm was shortened one inch and a half. The fragments were displaced forward, prominent in front of, and a little below the joint. As in case No. III., it might easily be mistaken for the head of the bone; but the difficulty of diagnosis had been very much lessened by the subsidence of the swelling. There was no motion between the fragments; nor could the deformity, by any manipulation or extension, be made to disappear. It was probably impacted.

March 23, 1856, nearly ten months after the accident, I found the fragments remaining as when I first examined the limb, and the arm shortened one and a half inches. The elbow hung a very little back from the line of the body. The upper end of the lower fragment was lifted to within one inch of the head of the humerus; the upper fragment having its head in the socket with its lower end downward and forward. The arm was, however, in every respect, as useful as before it was broken. It was equally strong, and he could raise his arm as high, and move it in every direction as freely as he could the other.

*Causes.*—Epiphyseal separations belong almost exclusively to children, but true fractures at the surgical neck occur most often in adult life; with the exception of the two lads, one of whom was twelve years old and the other fifteen, all of the examples of this latter accident seen by me occurred in adults, and of twenty cases in which I find the ages recorded, the average age is forty-three years; yet, A. Cooper declares these fractures to be most common in infancy, while Malgaigne has never seen a case in a person under fifty-three years.

Both epiphyseal separations and fractures at this point are occasioned, in most cases, by direct blows or falls upon the shoulder. Of nineteen examples in which I find the cause recorded, fourteen were from direct blows, four from indirect blows, and one from muscular action, as in throwing a ball. Of the four resulting from indirect blows, one was from a fall upon the hand, seen by Desault, and three were from falls upon the elbow, of which two were seen by Desault, and one (Case IV.) by myself.

*Pathology.*—I have found the fragments sensibly displaced in five cases out of seven; a proportion much greater than has been observed by Malgaigne, who has only seen a displacement twice in more than twenty cases. It is certain, however, that complete or sensible displacement is less common in this fracture than in most other fractures, the broken ends being retained in place, probably, by the long tendon of the biceps.

As to the direction of the displacement, I have seen the upper end of the lower fragment drawn forward and upward toward the coracoid process three times, in one of which examples the upper fragment plainly followed in the same direction. Sir Astley Cooper declares that with infants this direction is constant, and in museum specimens I have seen but one exception. In the specimen of fracture of the surgical neck, with also displacement of the head, belonging to Dr. Pope, this direction of the fragments is plainly seen, as also in a specimen belonging to Dr. Neil, of the Pennsylvania Medical College, where the lower fragment almost reaches the coracoid process, and in a specimen contained in one of the cabinets of the University of Pennsylvania, where the upper end of the lower fragment has become united by bone to the coracoid process.

The only exception which I have met with is in the possession of Dr. Neil. In this example the two ends are tilted toward the axilla. In the recorded examples, also, I find the displacement forward mentioned four times, and the displacement toward the axilla but once. I am compelled, therefore, to doubt the accuracy of Malgaigne's observations, who thinks he has seen the lower fragment most often drawn toward the axilla, as well as the observations of those who think that the upper fragment is generally displaced outward, yet no doubt they do sometimes assume this position. Desault has seen them both thrown backward; while Dupuytren, Paletta and others have seen them pushed outward; and I have in my cabinet the copy of a specimen in which both fragments are drawn outward, but the lower fragment is to the inner side of the upper.

When the fracture occurs at or near the epiphysis, it is sometimes accompanied with impaction of the same character as we have already described when speaking of fractures through the tubercles. Robert Smith has given, in his treatise, an engraving intended to illustrate the relative position of the fragments in extra-capsular impacted fractures, and the line of separation very nearly corresponds to the line of junction of the epiphysis with the shaft.

But in a majority of cases no impaction occurs. Dr. Charles A. Pope, of St. Louis, Mo., has two specimens of this kind, in which no union has taken place, nor is there any evidence that impaction had ever occurred. In one case the line of fracture commences at the junction of the head with the shaft, and extends thence

irregularly across to a point half an inch below the greater tuberosity. In the second specimen, the fracture commences at the same point and terminates three quarters of an inch below the greater tuberosity. In relation to these bones Dr. Pope remarks: "These are not cases of detachment of the epiphyses, as the bones are evidently those of adults; and there is at their lower extremities, above the condyles, no trace of an epiphyseal line."

**Results.**—Four of the examples of fracture of the surgical neck seen by me resulted in perfect limbs, and three are more or less deformed; but it has already been noticed that of the whole number only five were ever displaced, and of these five only two are completely restored. In one of these, no bony union has taken place after the lapse of two years or more. It is satisfactory, however, to know that, with the exception of this last (Case III.), all of the patients have recovered the free and complete use of their arms.

*Symptoms, or Differential Diagnosis of Accidents about the Shoulder-Joint.*

No place could be more appropriate than this to call attention to the difficulty of diagnosis in the case of accidents about the shoulder-joint, a difficulty which surgeons have constantly recognized, and which has sometimes rendered diagnosis impossible. But I have considered this subject so fully in my report to the American Medical Association,\* that I shall refer my readers to that paper, and shall present in this place only an epitome of the most prominent diagnostic signs.

Let us first study the ordinary signs of a dislocation at the shoulder-joint, regarding this as the type with which the other accidents are to be compared.

**A. Signs of a Dislocation.** (*Cause*, generally occasioned by a fall upon the elbow or hand.)

1. Preternatural immobility.

2. Absence of crepitus.

3. When the bone is brought to its place it will remain without the employment of force.

These three are common signs, which apply to any other joint as well as the shoulder.

4. Inability to place the hand upon the opposite shoulder, or to have it placed there by an assistant, while at the same time the elbow touches the breast. This is a sign common to all of the dislocations of the shoulder.†

The following are special signs, or such as belong only to particular dislocations of the shoulder.

5. Depression under the acromion process; always greatest underneath the outer extremity, but more or less in front or be-

\* Transactions of the American Medical Association, vol. ix., p. 129.

† Report on a new principle of diagnosis in dislocations of the shoulder-joint, by L. A. Fuqua, Prof. of Surgery in the Medical College of Georgia. Trans. Amer. Med. Assoc., vol. x., p. 115.

hind, according as the dislocation may be into the axilla, forward or backward.

6. Round, smooth head of the bone felt in its new situation, and very probably removed from its socket; moving with the shaft. Absence of the head of the bone from the socket.

7. Elbow carried outward, and in certain cases forward or backward; and not easily pressed to the side of the body.

8. Arm shortened in the dislocation forward, and slightly lengthened when in the axilla.

*B. Signs of a Fracture of the Neck of the Scapula.* (Cause, generally a direct blow.)

1. Preternatural mobility.

2. Crepitus generally, detected by placing the finger on the coracoid process and the opposite hand upon the back of the scapula, while the head of the humerus is pushed outward and rotated.

3. When reduced it will not remain in place.

4. The hand may generally, but with difficulty, be placed upon the opposite shoulder.

5. Depression under the acromion process, but not so marked as in dislocation.

6. Head of the bone may be felt in the axilla, but less distinctly than in dislocation. Never much forward or backward. Head of the bone moves with the shaft. Head of the bone not to be felt under the acromion, although it has not left its socket.

7. Elbow carried a little outward, but not so much as in dislocation. Easily brought against the side of the body.

8. Arm lengthened.

9. The coracoid process carried a little toward the sternum, and downward.

10. Pressing upon the coracoid process it is found to be movable, and it is also observed that it obeys the motions of the arm.

*C. Signs of Fracture of the Anatomical Neck of the Humerus. Intra-Capsular.* (Cause, a direct blow; generally opening to the joint, but not always.)

1. Mobility not increased, nor diminished.

2. Crepitus, generally discovered by pressing up the head of the bone into its socket and rotating; or when the tubercles are also broken, by grasping the tubercles and rotating the arm.

3. Fragments not generally displaced.

4. The hand can be placed easily upon the opposite shoulder.

5. Very slight, if any, depression under the acromion process.

6. Head of the bone generally in its socket, but not felt so distinctly as before the fracture.

7. Elbow falls easily against the side of the body, or is easily placed there.

8. Arm not lengthened, nor appreciably shortened, unless the head be driven so much into the body as to separate the tubercles.

9. In this latter case there are present also the signs of fracture of the tubercles.

*D. Signs of Fracture of the Humerus through the Tubercles. Extra-Capsular. (Cause, direct blows.)*

1. Generally, there is neither marked mobility nor immobility, except what immobility may be due to a contusion of the muscles.

2. Crepitus, discovered, but not so easily as in intra-capsular fractures, by rotating the arm, while the tubercles are grasped firmly.

3. If displacement exists, the fragments are not always easily kept in place when once reduced.

4. The hand can be placed upon the opposite shoulder.

5. No depression under the acromion process.

6. Head of the bone in its socket, and moving with the shaft, when, as is usually the case, it is impacted.

7. Elbow hangs against the side of the body.

8. Arm shortened when impacted, but not very appreciably.

The signs which characterize this accident are more obscure than in either of the other shoulder accidents. They are mostly negative, and will not generally be determined positively except in the autopsy.

*E. Signs of a Longitudinal Fracture of the Head and Neck, or splitting off of the Greater Tubercle. (Cause, direct blow upon the front of the shoulder.)*

1. Mobility of the limb natural.

2. Crepitus; elicited especially by grasping the tubercles and rotating the arm, or by carrying it up and back and then rotating.

3. When reduced, the fragments will not remain in place.

4. The hand can be placed upon the opposite shoulder.

5. Some depression under the acromion process.

6. A smooth bony projection directly underneath the coracoid process, or close upon its inner or outer side, moving with the shaft. The head of the bone cannot be felt in the socket, yet the space under the acromion is not entirely unoccupied.

7. Generally, but not always, the elbow hangs against the side. Sometimes it inclines a little backward. It can always be easily brought to the side.

8. Arm generally neither lengthened nor shortened.

9. A remarkable increase in the antero-posterior diameter of the upper end of the bone.

10. A deep vertical sulcus between the tubercles, corresponding with the upper part of the bicipital groove.

*F. Signs of a Fracture through the Surgical Neck. (Cause, direct blows.)*

1. Preternatural mobility often, but not constantly present.

2. Crepitus, produced easily when there is no impaction, or when the displacement is not complete, but with difficulty when impaction exists or the displacement is complete.

3. When once the fragments have been displaced, it is exceedingly difficult ever afterward to maintain them in place.

4. If the fragments remain in place, the hand can be easily placed upon the opposite shoulder. When completely overlapped, it is difficult.

5. A slight depression below the acromion, not immediately underneath its extremity, but an inch or more below.

6. Head of the bone in the socket, and moving with the shaft when impacted, but not moving with the shaft when not impacted. The upper end of the lower fragment being often felt distinctly pressing upward toward the coracoid process; its broken extremity being easily distinguished by its irregularity from the head of the bone.

7. Elbow hanging against the side when the fragments are not displaced, but away from the side when displacement exists.

8. Length of arm unchanged unless the fragments are impacted or overlapped; or both fragments are much tilted inward. If the fragments are completely displaced, the arm is shortened.

*G. Signs of a Separation at the Epiphysis. (Cause, direct blows.)*

1. Preternatural mobility.

2. Feeble crepitus; less rough than the crepitus produced when broken bones are rubbed against each other.

3. Fragments replaced are not easily maintained in place.

4. Same as in preceding variety of fracture.

5. The depression is not immediately under the acromion, yet higher than in most fractures of the surgical neck, perhaps three quarters of an inch below the acromion process.

6. Head of the bone in its socket, and not moving with the shaft. Upper end of lower fragment projecting in front, when displacement exists, and feeling less sharp and angular than in case of a broken bone; indeed, being slightly convex and rather smooth, it may easily be mistaken for the head of the bone.

7. Same as in preceding variety.

8. Length of arm not changed unless the fragments are overlapped, or both fragments are tilted upon each other. When the fragments are overlapped, the arm is shortened.

9. This accident is almost peculiar to infancy and childhood. It seldom occurs after the fifteenth year.

There are other accidents about the shoulder-joint, such as a pathological partial luxation of the humerus, dislocation of the tendon of the biceps, &c., which might possibly be confounded with fractures, but the consideration of which I shall reserve for another time.

[To be continued.]

## EXCISION OF THE KNEE-JOINT.

[Reported to the Boston Society for Medical Improvement, and communicated for the Boston Medical and Surgical Journal.]

BY SAMUEL CABOT, JR., M.D.

WM. H., laborer, 20 years of age, leuco-phlegmatic constitution. In February, 1853, while at work in the woods, he found his right knee "getting stiff," as he said. This symptom increased from day to day, so that he was obliged after a few days to give up work, and lie still for three or four weeks. He then went to work again, and continued at work for about a fortnight, when his knee troubled him so much that he was obliged to quit work again. On the 2d of April, 1853, he entered the Massachusetts General Hospital, where he remained for three weeks, after which he was well enough to work on a farm, until June, 1854, at which time his knee became again so painful and stiff that he entered the hospital a second time. Under the use of issues, &c., he recovered the use of his limb sufficiently to go to work again for a month. He called on me in September, 1854, with some return of the inflammatory symptoms about the joint. I advised him to take a voyage to Ireland, which he did, and remained about four months in that country, among his friends. On his return, he showed me his knee, which seemed to be almost perfectly well. I cautioned him to use it carefully, and advised him to work in the open air. He went on to a farm, and continued at farm work until April, 1856, at which time he came to the city, and drove a team until Aug. 29th, 1856, when one day, in walking along the sidewalk, he fell through a scuttle, producing an injury of the joint which had been in trouble before, and causing an inflammation which laid him up for 6 weeks; after which, he got about again and drove his team for a month. But inflammation coming on again, he was laid up all winter, and on the 5th of May, 1857, he entered the Hospital by my advice.

On the 6th of May, after having the case represented to him, he decided to have excision of the joint performed. At the time of his entrance, and for some time previous, he had had a discharge of a purulent fluid from a sinus, opening just above the outer hamstring, between it and the external condyle of the femur. The joint was swollen, and somewhat tender. Motion was painful. The foot was everted. He had no cough, and no symptoms of trouble in the chest. His health was somewhat deteriorated by confinement and suffering, but his appetite was fair, and his digestion good.

May 6th, 1857, he was taken to the amphitheatre and fully etherized. The operation was performed by the  $\pi$  incisions. It being found difficult to get at the joint without removing the patella, moreover that bone being found much diseased, it was removed; the joint was freely opened, the ends of the bones pushed up, and



freed from the soft parts, and a bow saw with a very narrow blade, the teeth of which were directed upward, was pushed over the ends of the bones, from which slices were removed, by sawing from behind forward. Finding that there were several cavities, containing tubercular-looking matter, which were left behind, and not wishing to shorten the limb more than was absolutely necessary, I removed these diseased parts with the gouge and gouge-forceps, connecting the cavities thus formed with the exterior of the bone by canals, so as to allow the fluids freely to discharge themselves. The limb was then straightened, and the skin having been brought together with stitches, it was placed in a gutta-percha trough splint, previously fitted to it, with a hole cut corresponding to the ham, to allow the escape of the fluids. The surfaces of the bone came well together, the limb being perfectly straight, and only about an inch shorter than the sound one.

The Hospital Record shows that he had some pain, requiring opiates, and some fever, with acceleration of the pulse, for about a week, at the end of which time suppuration was fully established, amounting, by estimate, to about three ounces per diem. The appetite was good; he was taking beef tea, chicken, &c., with a good relish. Partial union of the skin, by the first intention, took place. He required tonics, porter, and stimulating diet, for something more than a month. At the end of six weeks the bones were found to be united and quite firm, though the patient was timid, and unwilling to allow the limb to be handled without taking hold of it himself.

Three months after the operation he had an injection of nitric acid, diluted with water, for a couple of sinuses which were still open and discharging, and at the bottom of which rough bone could be felt. At that time he walked about the ward on crutches. The injection several times caused inflammation, and some constitutional disturbance, though on the whole it seemed to be useful. The discharge gradually diminished. Several small bits of bone were from time to time removed. He got out of doors, and walked about the grounds in the course of the fourth month, with decided advantage to his health and appetite. He gradually got to using one crutch, then a cane, and at this time he can walk about without any cane. He keeps a fruit-stall at the North End; he buys his own fruit, and walks about town freely. He has this evening ridden to my house, and walked from thence to the meeting, keeping up with me at my ordinary gait when not hurried, and has walked up the two long flights of stairs to this room nearly as fast as I should have done if unaccompanied. There is still a sinus open, from which escapes a small quantity of watery fluid, but it very seldom annoys him. He has had one slight attack of redness and pain since leaving the Hospital, followed by a discharge of pus, from which, however, he entirely recovered in a few days. The bony union is complete and firm.

## IMPACTED RECTUM, CAUSED BY EATING STICK CINNAMON.

[Reported to the Boston Society for Medical Observation, and communicated for the Boston Medical and Surgical Journal.]

BY ROBERT WARE, M.D.

C. G., a boy 10 years of age, ate, late in the afternoon of Saturday, April 11th, very freely of stick cinnamon. He was playing on the wharf, and easily obtained large quantities of it. He continued to eat it at intervals through the evening, and felt no inconvenience till he went to stool at noon on Sunday. He then found that he could pass nothing, but had considerable soreness about the anus, from which he drew several pieces of the cinnamon. He kept about during the day, though in considerable pain, and appeared on the stage at Sunday School that night.

On Monday, the pain was worse, but his appetite continued good and he went to school. At noon he began to have a thin, scanty, high-colored, offensive, involuntary discharge from the bowel. He told the family that he had a diarrhœa; his evident disinclination to move was ascribed to this cause, and he took some paregoric.

On Tuesday, the pain had increased so much that he could scarcely sit without crying. His appetite was diminished, but he was at school that day.

On Wednesday, he complained of the soreness of the rectum. An examination was made by Dr. John Ware, who was attending the family, and the lower part of the bowel was found to be completely filled with the sticks of cinnamon. An enema of sweet oil was ordered, which brought away a few pieces.

On Thursday, the patient being etherized, I passed the finger into the rectum and proceeded to break up and hook down the mass. After about twenty minutes, all had been brought down which could be reached by the finger. The cinnamon was in pieces varying from one-fifth to one-fourth of an inch in length (some of them were upward of half an inch); the quantity removed amounted to half a teacupful. At first there was but little action on the part of the intestine, but latterly there was much bearing down of the rectum, which helped to bring away the mass, and to force that above down within reach of the finger. He was ordered a dose of castor oil and an enema. The oil operated in about three hours; the dejection consisting of matter, such as had been brought away. After the enema he had a second discharge, the last half of which was fecal and with no sticks in it. The discharges after this were wholly fecal. He had no further trouble, except a slight soreness which lasted a few days. The cinnamon, washed clear of all extraneous matter, amounted to a moderate sized teacupful. The occurrence of the watery discharge is worthy of notice, since, without any examination of the rectum, it would have misled the physician as to the nature of the case.

About four years ago I saw a case of obstruction from the same cause, which also occurred in Dr. John Ware's practice. The boy

then went a week without any discharge, complaining at first only of costiveness, till the soreness about the anus led to an examination. Rather a longer attempt was made to remove the mass by cathartics and injections, but it was finally taken away with the finger. The quantity removed was larger than in the case above reported, amounting to nearly half a pound; a large quantity of feces was passed afterwards, and the boy recovered without any bad symptoms.

I do not know if other cases of obstruction from this particular cause have been reported, but, considering how often cinnamon is eaten by children playing about the wharves, it is a little strange that they are not more frequent.

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#### DR. SKINNER'S FRACTURE APPARATUS.

[Communicated for the Boston Medical and Surgical Journal.]

THE mechanical contrivances for obtaining and maintaining proper position of fractured bones, have been so numerous, and in some instances of so complicated a character, that the general practitioner in the country, who has to give equal attention to all branches of the profession, often finds it difficult to decide upon the particular apparatus he shall use, and sometimes almost impossible to understand the practical application of the instrument in question.

It appears to me to be a very great desideratum for the practitioner to have an efficient yet uncomplicated and economical fracture apparatus, of easy and ready application, and at the same time efficient in fulfilling the various and multiform indications required. This matter, perhaps, assumes greater importance in this locality (near Dartmouth College, N. H., and Woodstock, Vt.), because of the frequent suits for mal-practice which have taken place of late years.

The desideratum mentioned, it seems to me, can be obtained by the use of Dr. S. A. Skinner's improved fracture apparatus, manufactured by G. A. Watkins & Co., Springfield, Vt. (the sole owners of the patent right), better than by any other contrivance I have examined. The apparatus for fracture of the lower extremities particularly, commends itself as a superior arrangement. The extension and counter extension can be maintained in a direct line with the fractured bone. The suffering from the confined and fixed position of the patient, and the constant pressure upon the same parts, which is unavoidable with most contrivances, is obviated. The position of the limb can be changed, either flexed or extended, without disarranging the apposition of the bones or any of the dressings. In cases of compound fracture the bandages may be removed for any examination or local treatment necessary, without disturbing the extension and counter extension of the

limb, as the extending force is made outside of the splint. A most valuable addition to this contrivance is Watkins & Co.'s improved oscillating or swing splint. After the limb is arranged in the apparatus, it can then be swung on this oscillating splint, which keeps it secure from the pressure of bed-clothes or injury of any kind, and at the same time permits the patient to move his limb and even his whole body in bed, obtaining whatever position he may desire.

I have not attempted a description of the apparatus, but merely wish to mention some of the advantages belonging to this interesting contrivance, and feel confident that it is the most simple in construction, easy of adaptation, at the same time efficient and economical in character, that the ingenuity of man has wrought out; and commend it to those who wish to be ready for the emergencies that are constantly presenting themselves to the physician, and which he should be ready to meet if he regards the welfare of his patient, or his own reputation and success in life.

Queechy, Vt., July 10th, 1858.

P. PINEO.

STATISTICS OF TRACHEOTOMY.

[Translated from the *Gazette des Hôpitaux*, March 13th, 1858, for the Boston Med. and Surg. Journal.]

THE statistics of the operations of tracheotomy performed during a number of years at the *Hôpital des Enfants* at Paris, where the effects can be observed upon an extended scale, must always be interesting and valuable. In former years we have frequently entered into practical details on the subject. We now quote from the *Journal of Practical Medicine and Surgery* the following statistics relative to the operations of tracheotomy performed during the eight years just elapsed.

The following is the list of these operations from 1850 through 1857, with the number of cures obtained:

1850—20 operations	-	-	-	-	6 recoveries.
1851—31	"	-	-	-	12 "
1852—59	"	-	-	-	11 "
1853—61	"	-	-	-	7 "
1854—45	"	-	-	-	11 "
1855—48	"	-	-	-	10 "
1856—55	"	-	-	-	14 "
1857—71	"	-	-	-	15 "
Total, 390					86

It will be seen by the above table, that the proportion of recoveries, although very unequal in the several years, presents a very similar general average; that is, from 1 in 4 to 1 in 5 of the whole number operated on yearly. It should be mentioned that the majority of the children operated on were in the last stage of croup, and were consequently in imminent danger of death.

M. Guersant, in whose wards this estimate was prepared, gives the following summary of the indications for and against tracheotomy, based upon the age of the children, the existing complications, &c.

Age is an important element to be considered. Amongst the cases which compose the above table, there is one of a child 18 months old, who died with convulsions during tracheotomy. M. Chaillon, the author of the article cited by us from the *Journal of Practical Medicine and Surgery*, states that he saw, on the 7th of January last, a little girl of two and a half years die during the operation, notwithstanding the well-known skill of the surgeon. He had also seen a similar case in private practice—the patient being also a girl less than three years old.

Nevertheless, whilst the peculiar difficulties of tracheotomy in subjects under the age of two years are admitted—difficulties ascribable to the restricted relations and volume of the parts at that age; to the dangers of a minute, long and delicate dissection; and especially to the small size and mobility of the trachea, which often allow of the insertion of the tube only with extreme difficulty—M. Guersant does not consider the youth of the patient an absolute contra-indication to tracheotomy.

The same is true as regards pneumonia, when it complicates pseudo-membranous croup. For a long time, says M. Chaillon, the existence of this complication was thought sufficient wholly to contra-indicate tracheotomy. At present, M. Guersant adopts the opposite opinion; and he has become convinced that, in establishing respiration by an artificial track, he has favored the resolution of the pneumonia. He admits but one decided contra-indication to opening the trachea in croup—and that is, diphtheritic infection, or general diphtheritis. When a child whose vocal chords have been invaded by false membranes, exhibits at the same time similar morbid products in the nose, the ears, or upon the skin; when there are attacks of epistaxis and every sign of extreme debility—tracheotomy will be useless; the child will inevitably die.

M. Guersant does not, moreover, consider the extremest degree of asphyxia an insurmountable obstacle to the success of the operation, provided the condition is permanent, and has continued for at least an hour, with a persistent character.

Slow and continued asphyxia is, indeed, the very state which is the chief indication for tracheotomy, according to M. Guersant. It is, then, the only thing to be done—the re-establishment of respiration being that alone which can keep the child alive.

There is a sort of asphyxia which does not so imperatively call for the operation—viz., the intermittent form. M. Guersant has seen children making violent efforts to breathe and seemingly about to die instantly; false membrane having been discharged, the nature of the disease was certain. Notwithstanding, the friends having opposed the operation deemed necessary by the surgeon, the

usual means were employed—such as emetics, calomel, alum, and chlorate of potash—and the patients have recovered. But with the exception of these rare instances and of the far more common cases of general diphtheritis, M. Guersant thinks that, as a general principle, tracheotomy is distinctly indicated whenever there is continued and increasing embarrassment of the respiration.

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## THE BOSTON MEDICAL AND SURGICAL JOURNAL.

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BOSTON, JULY 22, 1858.

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### THE MEDICAL ART IN CONNECTION WITH EDUCATION.

A LITTLE volume has recently been published, written by one of the master spirits of our profession, Dr. Gairdner, of Edinburgh, consisting of three lectures, with notes and an appendix, on the subject of Medicine and Medical Education, which we have read with great interest, on account of the philosophical views it contains. The second lecture, on the relations of the medical art with popular education, shows that much of the quackery with which the public is abused arises from general ignorance as to the powers and scope of medicine in controlling disease. It is a pity that some light cannot be shed on this subject, that the community cannot be made to see that the physician stands in the relation of the servant of Nature, and not of her master; and that his duties lie in aiding her efforts and in obeying her commands, rather than in opposing her, *vi et armis*. The popular notion of a doctor is, one who is in a perpetual state of hostility with various diseases, armed with lancet and drugs which are to be used as the engines of war, every article of the pharmacopœia being destined for some particular disorder. Hence the general belief in specific remedies, and the success of those who vaunt the power of their secret remedies for particular diseases. We have lately seen admitted into the reading columns of a respectable daily paper of this city a long communication, doubtless written by some one who has a pecuniary interest in its sale, setting forth the virtues of a quack medicine which is known by those best able to judge of its merits as of no special value. In this way the error of which we speak is widely spread. The community are led to suppose that certain diseases are more effectually cured by means of this preparation than in any other way, and that the great thing in the treatment of disease is to find some drug for every disease. "In particular," says Dr. Gairdner, "it ought to be known, that the desperate search after a *remedy*, at any cost, and under any conditions, is utterly opposed to the cultivation of a sound moral relation between the physician and the patient. In the latter, it begets a habit of dissatisfaction and fault-finding if the cure is delayed. In the physician, on the other hand, it most directly encourages that fatal tendency to over-drugging, or of deception under the form of *placebos*, from which we have seen the recoil into homœopathy and countless other systems of magnificent nonsense."

A popular treatise on the powers of the medical art is greatly needed, to show that the treatment of disease consists less in the mere

administering of drugs, than in giving the right medicine at the right time; often withholding it altogether, even when vehemently desired by the patient or his friends. In the words of the author whom we have already quoted, "the physician stands by, the earnest watcher of nature's process; he removes whatever of external hindrance is in the way, and endeavors by simple, mostly palliative remedies, by regulated diet, by attention to sleeping and walking, and to the due performance of all the physiological functions, to rescue the patient from those dangers to which he would inevitably expose himself when unassisted, and when suffering under the vitiated tastes and feelings that accompany disease."

#### PUBLIC HEALTH.

A FEW weeks ago we called attention to a nuisance which has for some time prevailed in the western part of the city, to the great annoyance of the inhabitants. How far it will affect the health of those residing in the vicinity, and even of more remote citizens, time will show. We freely admit that hitherto Boston has been quite healthy, the rate of mortality being low for the season, which, however, is to be in part attributed to the customary diminution of the population at this season. We have no doubt the prevailing odor in the district alluded to will induce all, who are able, to decamp as speedily as possible, for the sake of exchanging the odor of sulphuretted hydrogen for the pure breezes of the country and sea-shore. The effects, if any, of this pollution of the atmosphere, will be felt at a later period. It is not the first few whiffs, but the continued inhalation of the gases of decomposition which poison the system, and produce, or predispose to diarrhoea, dysentery, typhoid fever, cholera and other epidemics.

The prevailing winds at this season are the South and West, and they carry the effluvia across a large part of the city. The odor can be easily perceived on any of the streets covering Beacon Hill, but is especially evident in Beacon, Charles, Chestnut, Mt. Vernon and Pinckney streets, as well as those at right angles with them. The presence of sulphuretted hydrogen in it is shown by a curious test; it has been noticed of late that the silver door-plates in that neighborhood became quickly tarnished. This has greatly excited the surprise and vexation of careful housekeepers, who complain that soon after the plate has been polished up, it becomes covered with a dark film, giving a most slovenly appearance to the front door. If the polishing is omitted for a few days, the plate becomes almost black from the action of the sulphur.

The attention of the City Government was called to the subject of public health by the City Physician in his Quarterly Report of January last, and a renewal of the sanitary measures which were adopted in 1854 was recommended. As that Report never was printed, we will quote from it a few sentences of much interest, premising that Dr. Clark, in his Quarterly Report of July 8th, 1858, again urged the importance of attention to the investigation and removal of all sources of disease arising from want of cleanliness, referring to this very Report of January. Dr. Clark says as follows:—"I have only to report a *single death* from smallpox during the year, and there is good reason to hope that for the future the disease will never again prevail to any extent in our city, so long as vaccination is attended to so generally by the profession and the people themselves.



"The general health of the city has been good. There have been no epidemic or malignant diseases, and the mortality from all causes has been unusually small, being less by 300 than in 1856, and by 900 than in 1849. The mortality in that year was 4829, and that of the last year only 3958.

"The advance in this respect seems to be fairly attributable to the great improvement in drainage, and the general cleanliness of the city since the introduction of the Cochituate water.

"But the facts which I have obtained through the courtesy of the City Registrar, from his forthcoming annual return to the State, show conclusively that much more might be done to improve the sanitary condition of the city, and for the removal of the causes of mortality which are within the reach of legislation and the executive power of the government.

"The population is now 170,000. Of this, about 70,000 may be estimated as including the lower and laboring classes—that is to say, those whose means of living are below the average in the scale of comfort.

"The Registrar has separated the mortality of each class; and the result shows a striking disparity against the lower classes. The operating causes are known to be those connected with over-crowded tenements, deficient drainage, ventilation, and intemperance.

"The returns give substantially the following results; and from the well-known accuracy of the Registrar, and from my own personal observation and knowledge of the localities, I think they must be quite reliable: 'The number of deaths occurring in the 100,000 persons who may be considered as having more of the comforts of life, the last year was 1196; while, in the second class (70,000), they amounted to 2762!'

"I respectfully suggest the expediency of repeating the present year the sanitary examination and report to the Board of Health which was made in the spring of the year 1854. Blanks prepared for this purpose are already on hand in this office, and the whole may readily be done (by the aid of the police department) without expense to the city."

"We have no disposition to croak; if the dose of sulphuretted hydrogen which we have to inhale is so largely diluted with atmospheric air as to be innocuous, the evil which we complain of is not one to be noticed in a medical journal; the daily papers must take cognizance of it. We only wish to call attention to the subject, in order to expose a possible source of epidemic disease. We think the matter should be inquired into, if only on the principle that "an ounce of prevention is worth a pound of cure," a maxim whose truth is nowhere more clearly shown than in the effects of sanitary measures in warding off disease.

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DR. THOMAS PENISTON has resigned the chair of Clinical Medicine and Auscultation in the New Orleans School of Medicine, and Dr. Austin Flint, of Buffalo, has been elected to fill his place.—Prof. S. G. Armor has resigned the chair of Pathology and Clinical Medicine in the Missouri Medical College of St. Louis.—Dr. B. L. Jones has been appointed to the professorship of Chemistry in the Oglethorpe Medical College.—Dr. J. C. Nott has resigned the chair of Anatomy in the University of Louisiana. Prof. T. G. Richardson succeeds him.

**Treatment of Dysmenorrhœa.**—Dr. Fenner, of New Orleans, extols the following mixture in the treatment of dysmenorrhœa. Take of gum guaiac., one ounce; Canada balsam, one ounce; oil of sassafras, two drachms; corrosive sublimate, one scruple; alcohol, eight ounces. Dissolve the guaiac and balsam in one half the spirit, and the corrosive sublimate in the other. Let the guaiac and balsam digest several days; then pour off the clear liquor, mix with the sublimate and add the oil. The dose is twenty-five drops in an infusion of sage, or sweetened water, night and morning, beginning a day or two before the expected period, until the discharge is fully established. In obstinate and severe cases the medicine should be commenced a week or ten days before the period.

In very severe cases he uses the following with much benefit: Take of spirit of camphor, three drachms; chloroform, two drachms; tincture of opium, one drachm. Mix. A teaspoonful in sweetened water every hour till relieved.—*New Orleans Medical News and Hospital Gazette*.

**Local Anæsthesia by Electricity in the Extraction of Teeth.**—Prof. C. A. Harris, of Baltimore, has tried the new method of preventing pain in the extraction of teeth, and reports favorably respecting it in his Journal. After some successful experiments at the College, he adopted it in his private practice, and, he says, "the result thus far has certainly been very satisfactory—a large majority of his patients, for whom he has extracted teeth, having assured him that they experienced no pain while undergoing the operation, and, as a general thing, those who did suffer stated that the pain was much less than what they usually suffered under the operation. The anæsthetic effect of the electric current seems to be different in different individuals. When the tooth can be grasped and extracted without the instrument coming in contact with the gum, the operation has been apparently completely successful, but when it is pressed against the surrounding soft tissues, the entire current of the electricity does not pass through the tooth, and we presume it is for this reason that the operation is not then successful."

**Nashville Medical Society.**—The physicians in Nashville (Tenn.) have recently organized themselves into a society, adopted a constitution, and chosen officers for the current year. Meetings are appointed to be held monthly. Dr. A. H. Buchanan is President, Dr. S. S. Mayfield Vice President, and Dr. George S. Blackie Secretary and Treasurer.

Prof. J. W. HAMILTON has become associated with Prof. John Dawson as joint editor and proprietor of the *Ohio Medical and Surgical Journal*, published at Columbus, in that State.

MR. JAMES BUCHANAN, who died recently at Edinburgh, has left £10,000 to the Royal Infirmary at Glasgow, his native city, and from £150,000 to £200,000 for the endowment of an industrial school foundation at Glasgow.

**Health of the City.**—Notwithstanding the deluge of sulphuretted hydrogen from the Back Bay and the river, Boston continues remarkably healthy, the number of deaths being but 53, and contrasting strongly with the mortality at this time a year ago, when the total number of deaths was 73, of which 17 were from consumption, 8 from scarlet fever, and 5 from typhoid fever.

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**Books and Pamphlets Received.**—Lallemand and Wilson on Spermatorrhœa.—Proceedings of the Sixty-Sixth Annual Convention of the Connecticut Medical Society.

**DIED.**—In Elmira, N. Y., 16th inst., Dr. O. D. Wilcox, by suicide. Dr. W. had been recently accused of surgical mal-practice, and criminal proceedings were instituted against him.—In San Francisco, Cal., June 8th, Dr. John Toomy, formerly of Chelsea, aged 38.

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**Deaths in Boston** for the week ending Saturday noon, July 17th, 53. Males, 25—Females, 28.—Accident, 1—apoplexy, 1—inflammation of the bowels, 2—disease of the brain, 1—cancer (of the uterus), 1—consumption, 10—convulsions, 3—cholera infantum, 2—cholera morbus, 1—colic, 1—dysentery, 1—diarrhœa, 1—dropsy, 1—dropsy in the head, 2—debility, 1—infantile diseases, 1—puerperal, 1—erysipelas, 2—scarlet fever, 2—typhoid fever, 2—fracture (of the leg), 1—intemperance, 1—inflammation of the lungs, 1—marasmus, 2—old age, 1—palsy, 1—pyæmia, 1—suicide, 1—teething, 2—tetanus, 1—unknown, 2—whooping cough, 2.

Under 5 years, 17—between 5 and 20 years, 6—between 20 and 40 years, 9—between 40 and 60 years, 13—above 60 years, 6. Born in the United States, 36—Ireland, 13—other places, 4.

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